

AI and the quest for diversity and inclusion: a systematic literature review

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Abstract

The pervasive presence and wide-ranging variety of artificial intelligence (AI) systems underscore the necessity for inclusivity and diversity in their design and implementation, to effectively address critical issues of fairness, trust, bias, and transparency. However, diversity and inclusion (D&I) considerations are significantly neglected in AI systems design, development, and deployment. Ignoring D&I in AI systems can cause digital redlining, discrimination, and algorithmic oppression, leading to AI systems being perceived as untrustworthy and unfair. Therefore, we conducted a systematic literature review (SLR) to identify the challenges and their corresponding solutions (guidelines/ strategies/ approaches/ practices) about D&I in AI and about the applications of AI for D&I practices. Through a rigorous search and selection, 48 relevant academic papers published from 2017 to 2022 were identified. By applying open coding on the extracted data from the selected papers, we identified 55 unique challenges and 33 unique solutions in addressing D&I in AI. We also identified 24 unique challenges and 23 unique solutions for enhancing D&I practices by AI. The result of our analysis and synthesis of the selected studies contributes to a deeper understanding of diversity and inclusion issues and considerations in the design, development and deployment of the AI ecosystem. The findings would play an important role in enhancing awareness and attracting the attention of researchers and practitioners in their quest to embed D&I principles and practices in future AI systems. This study also identifies important gaps in the research literature that will inspire future direction for researchers.